

GEOLOGICAL FACTORS OF TIMPANOGOS CAVE

from an article written by
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The Timpanogos Cave is one of the outstanding examples of the limestone caverns found in the world. It is found in American Fork canyon where there are numerous faults, folding and twistings of rock layers caused by the shrinking of the rock surface. When this was being done there were many openings or fissures extending along the faults. Timpanogos Cave is one of these. Geologists have estimated that Timpanogos Cave is well over 100,000 years old.

The many formations in the cave are composed of calcium carbonate in practically pure form. This was carried into the cave and deposited as water seepage from the surface above. As the water comes through the limestone ledges, it dissolves the lime and reaches the cave saturated with that substance. Evaporation takes place reducing the amount of water volume and the amount of lime which it can hold in solution, thus making the deposit on the surfaces of the cave and walls, (CO_2). Greater quantities of water collect in some places rather than others due to the irregularities in the rock surfaces, thus causing a greater deposit of lime where the largest volumes of water collect, starting the projections known as stalactites. When the water accumulates and drops from the ceiling to the tip, it deposits more of this lime solution where it hits the floor, thus forming a stalagmite.

These two types of formations are often found in pairs; the stalactite extending down from the ceiling and the stalagmite extending upward from the floor, one directly under the other. After the building process has gone on far enough, they meet, and form a pillar.

Some of the variations in shape may be caused in many ways. A small crystall may be giving direction to the lime-carrying solution. Capillarity is the controlling principle in giving the direction to lime-carrying solution. The peculiar warty-like and distorted forms seem to be due likewise to the action of capillarity.

One of the most outstanding characteristics of this cave is the coloring that appears in the formations, ranging in tints from dark brown, buff and cream to pure white, with shades of green, blue, lavender and red blended here and there. This coloring is due to the presence of iron.

"Great Heart," "Chocolate Fountain", and "Jewel Box" are interesting things to see in the cave. The brown deposits on the "Chocolate Fountain" owe their coloring to iron, like ferric oxide, and greens due to ferrous carbonate.

QUESTIONS

1. Find the meaning of: stalactite, stalagmite, fissure, capillarity, seepage, and accumulates.
2. What is the name of the formations in the cave?
3. Name the two kinds of formations in the cave.
4. What word would you use to name the formation, when stalactite and stalagmite unite?

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Questions on Timpanogos Cave (cont.)

5. What did the earth pressure leave in the mountain?
6. How did nature help this fissure to be filled?
7. Was it gravity that made the stalactite go down?
If not, what was it?
8. How old do the geologists think the cave is?
9. What mineral makes some of the coloring in the cave?
10. Name two beautiful formations in the cave.

HISTORY OF THE CAVE

This cave was accidentally found by a small son of a mining inspector in 1915. This was kept a family secret for five years. In August, 1921, some hikers found it again.

From "Alpine School District 4th Grade Resource Guide"
